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– CQB Receiver –
M4A1 Carbine with
10-Inch Upper Receiver

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DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

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CQB Receiver

- **M4A1 carbine with 10 inch barrel**
  - **Why a 10” barrel carbine?**
  - **What is the weapon configuration?**
  - **How was it tested?**
  - **How does it perform?**
  - **Questions?**

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Why a 10” barrel carbine?

- **Minimize length and weight of primary weapon**
- **Retain reliability and performance of standard weapon**
- **Maintain interoperability of SOPMOD equipment**
- **Maximize current logistics chain**

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What is the configuration?

- **National stock system parts**
- **No changes to lower receiver**
- **Gas port expanded from 0.062 to 0.070 inches**

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What are the differences?

- **Barrel shortened to 10.3 inches**

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What are the differences?

- **Standard 4-coil extractor spring replaced with 5-coil COTS spring IAW Navy engineering bulletin**

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What are the differences?

- **Standard flash hider replaced with M4QD flash hider for suppressor compatibility**

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What are the differences?

- **Replacement gas rings**

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How was it tested?

- **40,000 round test using 4 upper receivers fired 10,000 rounds each**
- **M855 ball ammunition**
- **300 round firing cycle**
  - **2-4 round short bursts**
  - **4-6 round medium bursts**
  - **Barrel temperature kept below 1000 degrees F**
  - **Weapons cooled after each 300 round cycle**
- **Weapons cleaned/gaged every 600 rounds**
- **10% suppressed**
- **Original gas rings replaced with COTS 1-piece rings at 5,000 rounds**

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How does it perform?

- **Parts breakage and replacement**

Wpn	Part	Round count
A	none	-
B	extractor spring	6300
	gas tube	6400
	extractor	6500
C	gas tube	7200
D	gas tube	9100

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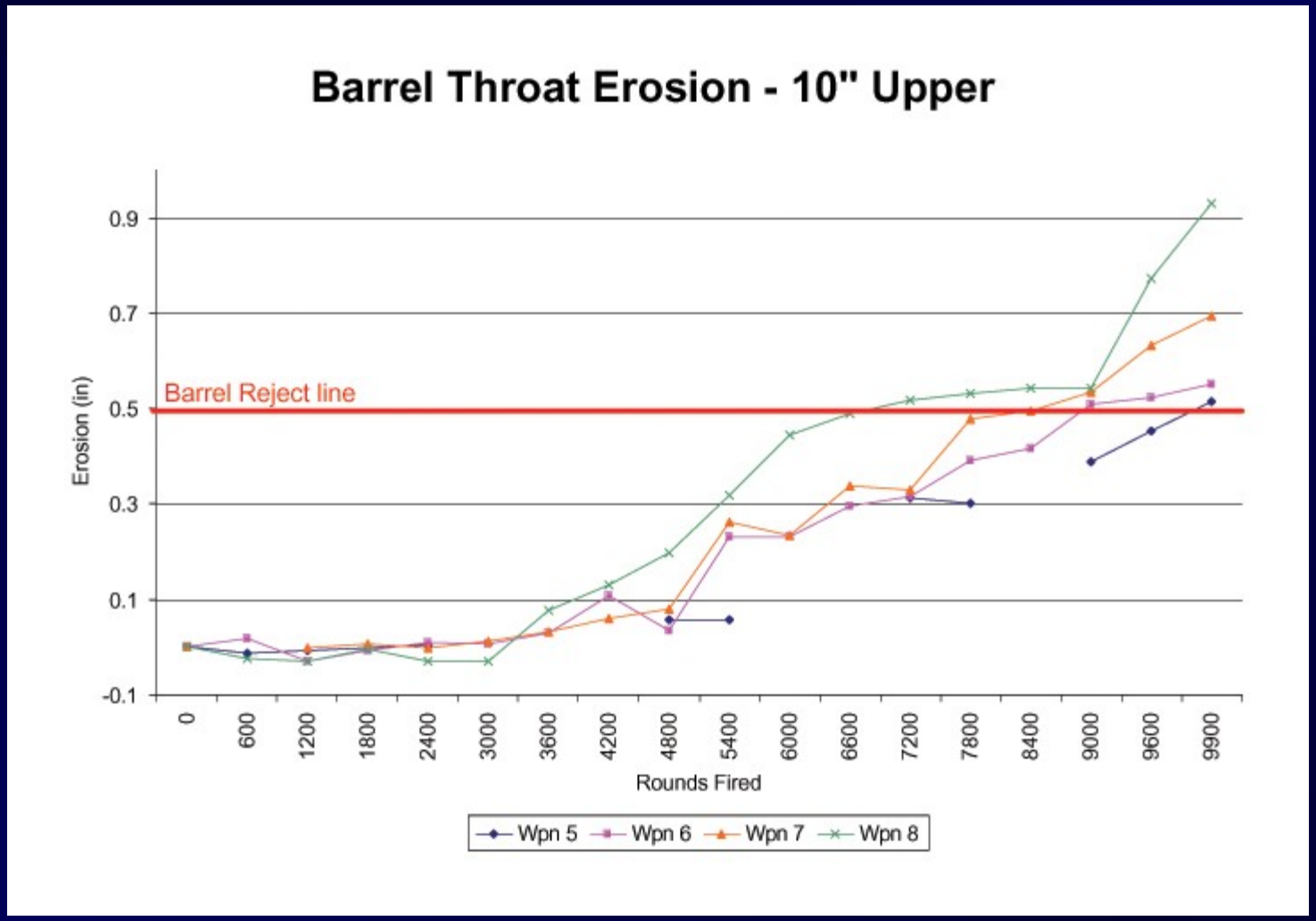
How does it perform?



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How does it perform?

- **Gas port erosion**

Cut-away Section of barrel at gas port with projectile in bore

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How does it perform?

- **Barrel Temperature (°F)**

713°F = max measured temp

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How does it perform?

- **Headspace (inches)**

Wpn	Initial	@ 10,000 rd
A	1.466	1.468
B	1.465	1.466
C	1.465	1.466
D	1.466	1.468

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How does it perform?

- **Reliability (mean rounds between stoppage)**

Wpn	Rounds	Stoppages	MRBS
A	10,245	6	1708
B	10,365	29	357
C	10,350	11	941
D	10,380	10	1038
Cum.	41,340	56	738

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How does it perform?

- **Accuracy (5 round group extreme spread in inches at 200 yd)**

Wpn	@ 5,000 rd	@ 10,000 rd
A	8.2	16.1
B	10.2	9.7
C	4.9	11.3
D	9.1	14.4

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How does it perform?

- **Rate of Fire (rounds per minute)**
  - **unsuppressed**

Wpn	Avg – clean	Avg – dirty
A762	659	
B707	647	
C723	636	
D757	659	

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How does it perform?

- **Rate of Fire (rounds per minute)**
  - **suppressed**

Wpn	Avg – clean	Avg – dirty
A1001	980	
B976	957	
C970	971	
D992	986	

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How does it perform?

- **Velocity (feet per second)**
  - **unsuppressed**
  - **clean weapon**

Wpn	Initial	@ 10,000	change
A2667	2438	229	
B2643	2516	127	
C2704	2488	216	
D2689	2557	132	

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How does it perform?

- **Velocity (feet per second)**
  - **unsuppressed**
  - **dirty weapon**

Wpn	Initial	@ 10,000	change
A2637	2548	89	
B2678	2595	83	
C2654	2570	84	
D2682	2561	121	

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Questions???